NON-PUBLIC?: N
ACCESSION #: 8805190014

LICENSEE EVENT REPORT (LER)

FACILITY NAME: Salem Generating Station - Unit 2 PAGE: 1 of 3

DOCKET NUMBER: 05000311

TITLE: Rx. Trip From 100% Power - False No. 23 RC Loop Low Flow Signal Due To Personnel Error
EVENT DATE: 04/21/88 LER #: 88-006-00 REPORT DATE: 05/10/88

OPERATING MODE: 1 POWER LEVEL: 100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: M. J. Pollack - LER Coordinator TELEPHONE #: 609-339-4022

SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT: On April 21, 1988 at 1533 hours, during routine power operation, a reactor trip occurred. The trip was a result of No. 23 Reactor Coolant (RC) Loop Low Flow with the reactor greater than or equal to 36% power (P-8). At the time of the event, a Maintenance technician was repairing a leak on the low pressure side of No. 23 RC Loop Flow transmitter. The root cause of this event has been attributed to personnel error. This event has been reviewed by Maintenance Department management. Appropriate corrective discipline with the individual(s) involved has been completed. Also, this event has been reviewed with Maintenance Department personnel during a "work shop" type session. The need to use established procedures for work was stressed. A sign (e.g., lamacoid) will be posted by the reactor coolant flow transmitters valving cautioning personnel about the sensitivity of this equipment to isolation valve manipulation. A Human Performance Evaluation System (HPES) investigation has been initiated.

(End of Abstract)

TEXT: PAGE: 2 of 3

PLANT AND SYSTEM IDENTIFICATION:

Westinghouse - Pressurized Water Reactor

Energy Industry Identification System (EIIS) codes are identified in the text as (xx)

IDENTIFICATION OF OCCURRENCE:

Reactor Trip From 100% Power - False No. 23 Reactor Coolant Loop Low Flow Due To Personnel Error

Event Date: 04/21/88

Report Date: 05/10/88

This report was initiated by Incident Report No. 88-149.

CONDITIONS PRIOR TO OCCURRENCE:

Mode 1 Reactor Power 100% - Unit Load 1160 MWe

DESCRIPTION OF OCCURRENCE:

On April 21, 1988 at 1533 hours, during routine power operation, a reactor trip occurred. The trip was a result of No. 23 Reactor Coolant (RC) Loop Low Flow with the reactor greater than or equal to 36% power (P-8), as per the review of the Sequence of Events printout. At the time of the event, a Maintenance technician was repairing a leak on the low pressure side of No. 23 RC Loop Flow transmitter.

The Unit was stabilized in Mode 3 (Hot Standby). At 1556 hours the same day, in accordance with the requirements of the Code of Federal Regulations 10CFR 50.72(b)(2)(ii), the Nuclear Regulatory Commission was notified of the automatic actuation of the Reactor Protection System (JC).

APPARENT CAUSE OF OCCURRENCE:

The root cause of this event has been attributed to personnel error.

The Maintenance technician who had been repairing a leak on the low pressure side of No. 23 RC Loop Flow Channel II transmitter did not use the procedure for this work as required. In support of this job, the technician had placed No. 23 RC Loop Flow Channel II in the trip condition. After the repair work, when the technician was returning the transmitter to service, a pressure spike in the sensing line momentarily caused the other two channels to indicate a false low flow condition in the RC Loop. This satisfied the 2/3 channel logic for a

reactor trip on low RC Loop flow with the plant greater than or equal to 36% power (permissive P-8).

ANALYSIS OF OCCURRENCE:

The Reactor Coolant Low Flow trip (above P-8) is designed to protect the plant against going below a Departure From Nucleate Boiling Ratio (DNBR) of 1.3. The arrangement to monitor reactor coolant flow involves measurement of the differential pressure across an elbow in the system. A single sensing line is used by three separate transmitters to monitor the high pressure side. Opening and closing the instrument valves used for transmitter isolation and equalization can cause pressure spikes if it is not performed in a specific sequence. These spikes will be seen by the other two transmitters since they are all joined to a common sensing line. The procedure for work on these transmitters identifies the specific valve manipulations to minimize the pressure spike thereby minimizing the probability of a reactor trip.

The reactor trip "first out" indication was "Power Range Flux Rate High". The actual cause of the trip RC Low Flow was not indicated due to the short duration (1 cycle) of the pressure spike. The First Out Overhead Alarm System has a 250 millisecond delay built in.

This event involved no undue risk to the health or safety of the public. However, because of the automatic actuation of the Reactor Protection System, the event is reportable in accordance with the requirements of the Code of Federal Regulations 10CFR 50.73(a)(2)(iv).

CORRECTIVE ACTION:

This event has been reviewed by Maintenance Department management. Appropriate corrective discipline with the individual(s) involved has been completed.

This event has been reviewed with Maintenance Department personnel during a "work shop" type session. The need to use established procedures for work was stressed.

A sign (e.g., lamacoid) will be posted by the reactor coolant flow transmitters valving cautioning personnel about the sensitivity of this equipment to isolation valve manipulation.

A Human Performance Evaluation System (
PES) investigation has been

initiated.

/s/ J. M. Zupko Jr.
General Manager -
Salem Operations

MJP:pc
SORC Mtg. 88-040

ATTACHMENT # 1 TO ANO # 8805190014 PAGE: 1 of 1

PSE&G

Public Service Electric and Gas Company P.O. Box E
Hancocks Bridge, New Jersey 08038

Salem Generating Station

May 10, 1988

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Dear Sir:

SALEM GENERATING STATION
LICENSE NO. DPR-75
DOCKET NO. 50-311
UNIT NO. 2
LICENSEE EVENT REPORT 88-006-00

This Licensee Event Report is being submitted pursuant to the requirements of Nuclear Regulatory Commission requirements 10CFR 50.73(a)(2)(iv). This report is required within thirty days of discovery.

Sincerely yours,
/s/ J. M. Zupko Jr.
J. M. Zupko, Jr.
General Manager -
Salem Operations

MJP:pc
Distribution

The Energy People

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